VOLUME 123 1995

PROCEEDINGS OF THE

AMERICAN MATHEMATICAL SOCIETY

EDITED BY

William Adams
Dale Alspach
J. Marshall Ash
Albert Baernstein II
Eric Bedford
Andreas R. Blass
John A. Burns
Christopher Croke
Richard T. Durrett
Clifford J. Earle Jr.
Eric Friedlander
Theodore W. Gamelin
James Glimm
Ken Goodearl
Roe Goodman
Thomas Goodwillie
Dennis A. Hejhal
Palle E. T. Jorgensen
Jeffry N. Kahn
Linda Keen
Irwin Kra, Managing Editor
Peter Li
Wei Y. Loh
M. Susan Montgomery
Jeffrey B. Rauch
Mary Rees
David Sharp
Lance W. Small
Hal L. Smith
Christopher D. Sogge
Ronald M. Solomon
Ronald Stern
Franklin D. Tall
John Trangenstein
Wolmer V. Vasconcelos
James West

PROVIDENCE, RHODE ISLAND USA

ISSN 0002-9939

Proceedings of the American Mathematical Society

This journal is devoted entirely to research in pure and applied mathematics.

Subscription information. *Proceedings of the American Mathematical Society* is published monthly. Subscription prices for Volume 123 (1995) are $605 list; $484 institutional member; $363 individual member. A late charge of 10% of the subscription price will be imposed upon orders received from nonmembers after January 1 of the subscription year. Subscribers outside the United States and India must pay a postage surcharge of $25; subscribers in India must pay a postage surcharge of $38. Expedited delivery to destinations in North America—$38; elsewhere—$91.

Back number information. For back issues see the *AMS Catalog of Publications.*

Subscriptions and orders should be addressed to the American Mathematical Society, P. O. Box 5904, Boston, MA 02206-5904. *All orders must be accompanied by payment.* Other correspondence should be addressed to P. O. Box 6248, Providence, RI 02940-6248.

Copying and reprinting. Material in this journal may be reproduced by any means for educational and scientific purposes without fee or permission with the exception of reproduction by services that collect fees for delivery of documents and provided that the customary acknowledgment of the source is given. This consent does not extend to other kinds of copying for general distribution, for advertising or promotional purposes, or for resale. Requests for permission for commercial use of material should be addressed to the Assistant to the Publisher, American Mathematical Society, P. O. Box 6248, Providence, Rhode Island 02940-6248. Requests can also be made by e-mail to `reprint-permission@math.ams.org`.

Excluded from these provisions is material in articles for which the author holds copyright. In such cases, requests for permission to use or reprint should be addressed directly to the author(s). (Copyright ownership is indicated in the notice in the lower right-hand corner of the first page of each article.)

Proceedings of the American Mathematical Society is published monthly by the American Mathematical Society at 201 Charles Street, Providence, RI 02904-2213. Second-class postage is paid at Providence, Rhode Island. Postmaster: Send address changes to Proceedings, American Mathematical Society, P. O. Box 6248, Providence, RI 02940-6248.

© 1995 by the American Mathematical Society. All rights reserved.

This journal is indexed in *SciSearch®*, *Research Alert®*, *CompuMath Citation Index®*, *Current Contents®/Physical, Chemical & Earth Sciences.*

Printed in the United States of America.

⊖ The paper used in this book is acid-free and falls within the guidelines established to ensure permanence and durability.

♻ Printed on recycled paper.

This publication was typeset using $\mathcal{A}\mathcal{M}\mathcal{S}$-TEX, the American Mathematical Society's TEX macro system.

10 9 8 7 6 5 3 2 1 00 99 98 97 96 95

PROCEEDINGS OF THE AMERICAN MATHEMATICAL SOCIETY

CONTENTS

Vol. 123, No. 1 Whole No. 427 January 1995

A. ALGEBRA, NUMBER THEORY, AND COMBINATORICS

Bernard Johnston and Jugal Verma, Local cohomology of Rees algebras and Hilbert functions 1
Anna Guerrieri, On the depth of the associated graded ring 11
Jan Trlifaj, Strong incompactness for some non-perfect rings 21
Jinzhong Xu, The existence of flat covers over Noetherian rings of finite Krull dimension 27
Maria E. Lorenz and Martin Lorenz, On crossed products of Hopf algebras 33
Jiping Zhang, Arithmetical conditions on element orders and group structure 39
Daqing Wan, A Chevalley-Warning approach to p-adic estimates of character sums 45
Karl Heinz Dovermann, Mikiya Masuda, and Dong Youp Suh, Nonisomorphic algebraic models of a smooth manifold with group action 55
Jonathan Lubin, Sen's Theorem on iteration of power series 63
R. L. Baker, Triangular UHF algebras over arbitrary fields 67

B. ANALYSIS

B. P. Duggal, On p-hyponormal contractions 81
Mary Lou Zeeman, Extinction in competitive Lotka-Volterra systems 87
Efton Park, Isometries of noncommutative metric spaces 97
M. V. Velasco and A. R. Villena, Continuity of random derivations 107
Jiye Yu, Singular Kobayashi metrics and finite type conditions 121
Zhibao Hu, The weak stability of the positive face in L^1 131
W. Hansen and I. Netuka, Volume densities with the mean value property for harmonic functions 135
Jesús Bastero, Julio Bernués, and Ana Peña, The theorems of Caratheodory and Gluskin for $0 < p < 1$ 141
Athanassios G. Kartsatos, Sets in the ranges of sums for perturbations of nonlinear m-accretive operators in Banach spaces 145
L. J. Bunce and J. Hamhalter, Traces and subadditive measures on projections in JBW-algebras and von Neumann algebras 157
Song-Ying Li and Bernard Russo, On compactness of composition operators in Hardy spaces of several variables 161
J. M. Aldaz, On compactness and Loeb measures 173
E. L. Koh and C. K. Li, A kernel theorem on the space $[H_\mu \times A; B]$ 177
R. Khalil and F. Saidi, Best approximation in $L^1(I, X)$ 183
Xianghong Gong, Real analytic submanifolds under unimodular transformations 191
Liming Yang, Uniform rational approximation 201
Marlène Frigon and Donal O'Regan, Existence results for some initial and boundary value problems without growth restriction 207

C. APPLIED MATHEMATICS

Ram U. Verma, Nonlinear demiregular approximation solvability of equations involving strongly accretive operators 217

D. GEOMETRY

Martin R. Bridson, On the existence of flat planes in spaces of non-positive curvature 223
Isaac Chaujun Lee, Projectively flat affine surfaces that are not locally symmetric 237
Mingliang Cai, Tobias Holck Colding, and DaGang Yang, A gap theorem for ends of complete manifolds 247
John T. Baldwin, Some projective planes of Lenz-Barlotti class I 251
Luis Paris, Topology of factored arrangements of lines 257

E. LOGIC AND FOUNDATIONS

Chris Good, Large cardinals and small Dowker spaces 263

F. STATISTICS AND PROBABILITY

Bernard Heinkel, The strong law of large numbers: a weak-l_2 view 273

G. TOPOLOGY

J. Nikiel, L. B. Treybig, and H. M. Tuncali, A rim-metrizable continuum 281
Yoshiyuki Ohyama, Vassiliev invariants and similarity of knots 287
R. W. Hansell and Shiho Pan, Perfect images of Čech-analytic spaces 293
Robert Gross, On the integrality of some Galois representations 299
Tomasz Rybicki, Isomorphisms between groups of diffeomorphisms 303
K. P. Hart and J. Vermeer, Fixed-point sets of autohomeomorphisms of compact F-spaces 311

Vol. 123, No. 2 **Whole No. 428** **February 1995**

A. ALGEBRA, NUMBER THEORY, AND COMBINATORICS

Ying-Sheng Liu, A counterexample to the deformation conjecture for uniform tree lattices 315
Le Maohua, On the diophantine equation $2^n + px^2 = y^p$ 321
D. S. Passman and Declan Quinn, Burnside's theorem for Hopf algebras 327
Daniel K. Nakano, A bound on the complexity for G_rT modules 335
Jie-Tai Yu, A product formula for minimal polynomials and degree bounds for inverses of polynomial automorphisms 343
Randall R. Holmes, A duality proof of a theorem of P. Hill 351
Marcelo Laca and Iain Raeburn, Extending multipliers from semigroups 355
David A. Clark, An upper bound of $\sum 1/(a_i \log a_i)$ for primitive sequences 363

B. ANALYSIS

A. Volberg, R. Younis, and D. Zheng, Subalgebras of $C(M(H^\infty))$ 367
Yifei Pan, Real analyticity of homeomorphic CR mappings between real analytic hypersurfaces in $\mathbf{C}^2$ 373
Jorma Arhippainen, On the ideal structure of algebras of star-algebra valued functions ... 381
Wojciech Chojnacki, A note on complete integrals 393
Shusheng Fu, An extension of the Foran integral 403
Gun-Marie Lövblom, Uniform homeomorphisms between the unit balls in L_p and l_p 405
Bertram Yood, Banach algebras with non-Hausdorff structure spaces 411
Claudio H. Morales and Simba A. Mutangadura, On the approximation of fixed points for locally pseudo-contractive mappings 417
Stephen D. Abbott, A unified approach to some prediction problems 425
J. García-Cuerva and K. S. Kazarian, Spline wavelet bases of weighted L^p spaces, $1 \le p < \infty$ 433
Martin Chuaqui, A unified approach to univalence criteria in the unit disc 441
Charles Swartz, Subseries convergence in spaces with a Schauder basis 455
Jürgen Bliedtner and Peter A. Loeb, Best filters for the general Fatou Boundary Limit Theorem 459
Michal Fečkan, Periodic solutions of certain abstract wave equations 465
Lea McClaran, Banach spaces with an unconditional basis that are isomorphic to a nonatomic Banach lattice 471
M. Meyer, G. Mokobodzki, and M. Rogalski, Convex bodies and concave functions 477
Mirosław Baran, Complex equilibrium measure and Bernstein type theorems for compact sets in $\mathbf{R}^n$ 485
Hiroshi Haruki and Themistocles M. Rassias, New generalizations of Jensen's functional equation 495
Carolyn Eoff, The discrete nature of the Paley-Wiener spaces 505
Jacqueline Fleckinger and Michel L. Lapidus, Indefinite elliptic boundary value problems on irregular domains 513

Yasuhiro Sasahara and Kazunaga Tanaka, A remark on positive radial solutions of the elliptic equation $\Delta u + K(|x|)u^{(n+2)/(n-2)} = 0$ in $\mathbf{R}^n$ 527
W. Allegretto and P. O. Odiobala, Nonpositone elliptic problems in $\mathbf{R}^n$ 533
Lance Barnett, Free product von Neumann algebras of type III 543

E. LOGIC AND FOUNDATIONS

Kostas Skandalis, On the characterization of recursively enumerable sets as pseudo-diophantine 555

F. STATISTICS AND PROBABILITY

Jeffrey S. Rosenthal, On duality of probabilities for card dealing 559
Xuming He and Gang Wang, Law of the iterated logarithm and invariance principle for M-estimators 563
Qi-Man Shao, On a conjecture of Révész 575

G. TOPOLOGY

Huaipeng Chen, An answer to a conjecture on the countable products of k-spaces 583
James W. Anderson, Parabolics on the boundary of the deformation space of a Kleinian group 589
Daniel Ruberman, Involutions on spin 4-manifolds 593
M. H. Eggar, On compositions of the loop and suspension functors 597
Paolo Lisca, A vanishing theorem for Donaldson invariants 607
Xiu-Chi Quan, Positive definite functions of Hopf C^*-algebras 615
Judith H. Silverman, Hit polynomials and the canonical antiautomorphism of the Steenrod algebra 627
Lizhen Ji, Convergence of heat kernels for degenerating hyperbolic surfaces 639

Vol. 123, No. 3 **Whole No. 429** **March 1995**

A. ALGEBRA, NUMBER THEORY, AND COMBINATORICS

Meighan I. Dillon, Buildings as inner ideal geometries 647
James K. Deveney and David R. Finston, A proper G_a action on C^5 which is not locally trivial 651
Paul Hill, A new characterization of totally projective groups of cardinality $\aleph_1$ 657
Francesco Pappalardi, On the exponent of the ideal class group of $\mathbf{Q}(\sqrt{-d})$ 663
Yale T. Herer and Michal Penn, Characterizations of natural submodular graphs: A polynomially solvable class of the TSP 673
William D. Banks, The Casselman-Shalika formula for a distinguished model 681
Ian M. Musson, Conditions for a module to be injective and some applications to Hopf algebra duality 693
James S. Wolper, The Riccati flow and singularities of Schubert varieties 703
Y. K. Kim and A. H. Rhemtulla, Weak maximality condition and polycyclic groups 711
Vladimír Palko, The weak convergence of unit vectors to zero in Hilbert space is the convergence of one-dimensional subspaces in the order topology 715
Takayuki Hibi, Star-shaped complexes and Ehrhart polynomials 723
Bernard Johnston and Daniel Katz, Castelnuovo regularity and graded rings associated to an ideal 727

B. ANALYSIS

S. J. Bhatt and H. V. Dedania, Banach algebras in which every element is a topological zero divisor 735
Jun Zhu, Local derivation of nest algebras 739
Jörg Eschmeier and Mihai Putinar, The finite fibre problem and an index formula for elementary operators 743

Luminita Lemnete, Application of the operator phase shift in the L-problem of moments . 747
E. Giner, Local minimizers of integral functionals are global minimizers 755
Aydin Aytuna, Linear tame extension operators from closed subvarieties of $\mathbf{C}^{d_\bullet}$ 759
Toshiko Koide, A note on hermitian operators on function spaces 765
Behzad Djafari Rouhani, Asymptotic behaviour of firmly nonexpansive sequences 771
Charles Vuono, Kähler Moišezon spaces which are projective algebraic 779
A. R. Villena, Stochastic continuity of random derivations on H^*-algebras 785
Peter Borwein, The arc length of the lemniscate $\{|p(z)| = 1\}$ 797
Zhongwei Shen, A note on the Dirichlet problem for the Stokes system in Lipschitz domains 801
Piotr Mikusiński, Tempered Boehmians and ultradistributions 813
Marvin Ortel, A counterexample to access theorems for C^∞ functions 819
Russell M. Reid, A class of Riesz-Fischer sequences 827
Russell M. Reid, A Pythagorean inequality 831
Xu-Jia Wang, Some counterexamples to the regularity of Monge-Ampère equations 841
Zheng Jian Hua, A remark on distribution of zeros of solutions of linear differential equations 847

D. GEOMETRY

Luc Vrancken and Changping Wang, Surfaces in $\mathbf{R}^4$ with constant affine Gauss maps 855
Thomas Ivey, Surfaces with orthogonal families of circles 865

E. LOGIC AND FOUNDATIONS

Robert Mendris and Pavol Zlatoš, Axiomatization and undecidability results for metrizable betweenness relations 873
Howard Becker, Representing projective sets as unions of Borel sets 883

F. STATISTICS AND PROBABILITY

Theodore P. Hill, Base-invariance implies Benford's Law 887
Alan Lambert and Barnet M. Weinstock, Descriptions of conditional expectations induced by non-measure-preserving transformations 897

G. TOPOLOGY

Shigeki Kikuchi and Osamu Saeki, Remarks on the topology of folds 905
Alan Dow and Klaas Pieter Hart, Cut points in Čech-Stone remainders 909
Annabel Deutsch and A. Guyan Robertson, Functions of conditionally negative type on Kazhdan groups 919
C. R. Carroll, Cycles in C^r twists 927
Yi Ming Zou, D-sets and BG-functors in Kazhdan-Lusztig theory 935
Yutaka Iwamoto, Menger manifolds homeomorphic to their n-homotopy kernels 945
R. J. Shaker, Jr., Dold manifolds with $(\mathbf{Z}_2)^k$-action 955
Tadashi Watanabe, Numerical meshes and covering meshes of approximate inverse systems of compacta 959
Charles Livingston, Knotted symmetric graphs 963

SHORTER NOTES

Paolo Cubiotti, A counter-example on a quasi-variational inequality without lower semicontinuity assumption 969
M. Ismail and A. Szymanski, A topological equivalence of the singular cardinals hypothesis 971

CORRIGENDA

R. A. Mollin and H. C. Williams, Corrigenda for "A conjecture of S. Chowla via the generalized Riemann hypothesis" 975
Phan H. Loi, Correction to "Remarks on automorphisms of subfactors" 977

Vol. 123, No. 4 Whole No. 430 April 1995

A. ALGEBRA, NUMBER THEORY, AND COMBINATORICS

K. Auinger, A system of bi-identities for locally inverse semigroups 979
Alan H. Durfee, Intersection homology Betti numbers 989
I. P. Goulden and D. M. Jackson, Combinatorial constructions for integrals over normally distributed random matrices 995
N. K. Thakare and A. R. Baliga, A unitary as a product of symmetries 1005
Hershel M. Farkas and Yaacov Kopeliovich, New theta constant identities II 1009
Ken Ono and Sinai Robins, Superlacunary cusp forms 1021
Ido Efrat, Abelian subgroups of pro-2 Galois groups 1031
Charles Ching-an Cheng, James H. McKay, and Stuart Sui-Sheng Wang, A chain rule for multivariable resultants 1037
Frederick W. Call, Integral closures of noetherian integral domains as intersections 1049
Charles Ching-An Cheng, James H. McKay, and Stuart Sui-Sheng Wang, Resultants of cyclotomic polynomials 1053

B. ANALYSIS

V. I. Bogachev, J. F. Mena-Jurado, and J. C. Navarro-Pascual, Extreme points in spaces of continuous functions 1061
Matjaž Omladič and Peter Šemrl, Linear mappings that preserve potent operators 1069
Swati Sastry, Existence of an angular derivative for a class of strip domains 1075
A. V. Koldunov, Hammerstein operators preserving disjointness 1083
V. A. Liskevich and M. A. Perelmuter, Analyticity of submarkovian semigroups 1097
Dashan Fan, Cesàro means of Fourier series on rotation groups 1105
K. J. Falconer, On the Minkowski measurability of fractals 1115
Branko Ćurgus and Branko Najman, The operator $(\operatorname{sgn} x)\frac{d^2}{dx^2}$ is similar to a selfadjoint operator in $L^2(\mathbf{R})$ 1125
Kenneth F. Andersen, Weighted inequalities for convolutions 1129
Qiyuan Na, Representation of a completely bounded bimodule map 1137
Piotr Hajłasz, Boundary behaviour of Sobolev mappings 1145
Meng Su, Initial value problem and global homeomorphisms 1149
Jack B. Brown, Intersections of continuous, Lipschitz, Hölder class, and smooth functions 1157
Tzu-Chu Lin, Random approximations and random fixed point theorems for continuous 1-set-contractive random maps 1167
Robert Dalmasso, Uniqueness theorems for some fourth-order elliptic equations 1177
E. R. Negrin, Operators with complex Gaussian kernels: boundedness properties 1185
David Borwein and Jonathan M. Borwein, On an intriguing integral and some series related to $\zeta(4)$ 1191
A. Z. Grinshpan, On an identity related to multivalent functions 1199
M. Angeles Miñarro, A characterization of quasinormable Köthe sequence spaces 1207
T. K. Muraleedharan and K. Parthasarathy, On unions and intersections of sets of synthesis 1213
Ole Christensen, Frame perturbations 1217
Tian Quan Yun, Asymptotic solution of a small parametered 2-D integral equation arising from a contact problem of elasticity based on the solution of a 2-D integral equation 1221
Marek Kosiek, Alfredo Octavio, and Marek Ptak, On the reflexivity of pairs of contractions 1229
Christoph Schmoeger, On a generalized punctured neighborhood theorem in $\mathscr{L}(X)$ 1237

C. APPLIED MATHEMATICS

Quan Zheng, Controllability of a class of linear systems in Banach space 1241

D. GEOMETRY

Hans Samelson, Darboux's lemma once more 1253

G. TOPOLOGY

M. G. Barratt, F. Cohen, B. Gray, M. Mahowald, and W. Richter, Two results on the 2-local *EHP* spectral sequence 1257
Ronnie Lee and Steven H. Weintraub, On the homology of double branched covers 1263
David Goldberg, R-groups and elliptic representations for unitary groups 1267
Mike Hurley, Generic homeomorphisms have no smallest attractors 1277
Eric Y. Leung and Tuong Ton-That, On a multiplicity formula of weights of representations of $SO^*(2n)$ and reciprocity theorems for symplectic groups 1281
Mitutaka Murayama and Kazuhisa Shimakawa, Universal equivariant bundles 1289
Žarko Bižaca, An explicit family of exotic Casson handles 1297

Vol. 123, No. 5 **Whole No. 431** **May 1995**

A. ALGEBRA, NUMBER THEORY, AND COMBINATORICS

Vladimir Shpilrain, On the rank of an element of a free Lie algebra 1303
Paulo Brumatti and Aron Simis, The module of derivations of a Stanley–Reisner ring 1309
Shreeram S. Abhyankar and Ikkwon Yie, Small Mathieu group coverings in characteristic two 1319
Wen-Fong Ke and Hubert Kiechle, On the solutions of the equation $x^m + y^m - z^m = 1$ in a finite field 1331
Zhi-Wei Sun, A congruence for primes 1341
Le Maohua, A lower bound for the class numbers of Abelian algebraic number fields with odd degree 1347
Shmuel Rosset, Free amalgams of rank two 1351
James N. Brawner, The Gaussian-Wahl map for trigonal curves 1357

B. ANALYSIS

Chunghyuk Kang, Topological classification of irreducible plane curve singularities in terms of Weierstrass polynomials 1363
R. L. Baker, The qualitative analysis of a dynamical system modeling the formation of two-layer scales on pure metals 1373
Jorge Mujica and Manuel Valdivia, Holomorphic germs on Tsirelson's space 1379
Miroljub Jevtić and Miroslav Pavlović, On $\mathcal{M}$-harmonic Bloch space 1385
N. P. Cac, A. M. Fink, and J. A. Gatica, Nonnegative solutions of the radial Laplacian with nonlinearity that changes sign 1393
Milutin R. Dostanic, An estimation of singular values of convolution operators 1399
Takeshi Kawazoe, Functions on noncompact Lie groups with positive Fourier transforms . 1411
Hernán R. Henríquez, On the compactness of strongly continuous semigroups and cosine functions of operators 1417
Knut Øyma, Non-Smirnov domains 1425
Gunnar F. Stefánsson, Universal Pettis integrability property 1431
Jor-Ting Chan, Numerical radius perserving operators on $B(H)$ 1437
Shutao Chen and Huiying Sun, Weak convergence and weak compactness in abstract M spaces 1441
Marius Mitrea, On Dahlberg's Lusin area integral theorem 1449
Berndt Brenken, K-groups of solenoidal algebras I 1457
El-Maati Ouhabaz, Gaussian estimates and holomorphy of semigroups 1465
Andrzej Wisniewski, Theorem of Kuratowski-Suslin for measurable mappings 1475
Peter Borwein and Tamás Erdélyi, Upper bounds for the derivative of exponential sums .. 1481
Norimichi Hirano and Noriko Mizoguchi, Positive unstable periodic solutions for superlinear parabolic equations 1487
Borut Zalar, On Hilbert spaces with unital multiplication 1497
Á. Elbert and I. P. Stavroulakis, Oscillation and nonoscillation criteria for delay differential equations 1503

Kok-Keong Tan, Jian Yu, and Xian-Zhi Yuan, The stability of Ky Fan's points 1511
Li-Chien Shen, On some modular equations of degree 5 1521
Djurdje Cvijović and Jacek Klinowski, New formulae for the Bernoulli and Euler polynomials at rational arguments 1527

C. APPLIED MATHEMATICS

C. Elsner, On a sequence transformation with integral coefficients for Euler's constant ... 1537

D. GEOMETRY

A. Rod Gover, Invariant theory for a parabolic subgroup of $SL(n+1,\mathbb{R})$ 1543
Rafael López and Sebastián Montiel, Constant mean curvature discs with bounded area .. 1555
J. R. Sangwine-Yager, A generalization of outer parallel sets of a convex set 1559

E. LOGIC AND FOUNDATIONS

Masahiro Shioya, The minimal normal μ-complete filter on $P_\kappa\lambda$ 1565
Martin Goldstern, Miroslav Repický, Saharon Shelah, and Otmar Spinas, On tree ideals .. 1573
Kyriakos Keremedis, On the covering and the additivity number of the real line 1583

F. STATISTICS AND PROBABILITY

David Neal, Commutation of variation and dual projection 1591

G. TOPOLOGY

A. Prástaro and Th. M. Rassias, A geometric approach to an equation of J. D'Alembert .. 1597
Józef H. Przytycki, An elementary proof of the Traczyk-Tokota criteria for periodic knots 1607
G. Hansel and J. P. Troallic, Nonseparability and uniform structures in locally compact groups 1613
Masakazu Teragaito, Twisting operations and composite knots 1623

CORRIGENDUM

A. Ballester-Bolinches and Luis M. Ezquerro, Correction to "On the Deskins index complex of a maximal subgroup of a finite group" 1631

Vol. 123, No. 6 **Whole No. 432** **June 1995**

A. ALGEBRA, NUMBER THEORY, AND COMBINATORICS

Carl Faith and Pere Menal, A new duality theorem for semisimple modules and characterization of Villamayor rings 1635
Burton Fein and Murray Schacher, $\mathbb{Q}(t)$ and $\mathbb{Q}((t))$-admissibility of groups of odd order .. 1639
S. C. Coutinho, Krull dimension of modules and involutive ideals 1647
Alexandre Turull, Equivalence of G-algebras for abelian G 1655

B. ANALYSIS

Akram Aldroubi, Portraits of frames 1661
D. J. Hartfiel, Dense sets of diagonalizable matrices 1669
K. R. Goodearl and E. S. Letzter, Skew polynomial extensions of commutative noetherian Jacobson rings 1673
Daqing Wan, Noetherian subrings of power series rings 1681
Michael Christ and Loukas Grafakos, Best constants for two nonconvolution inequalities . 1687
Shanzhen Lu and Dachun Yang, Oscillatory singular integrals on Hardy spaces associated with Herz spaces 1695
Herve Lehning, Dynamics of typical continuous functions 1703

Juha Heinonen, The diameter conjecture for quasiconformal maps is true in space 1709
Sze-Kai Tsui, Some weakly inner automorphisms of the Cuntz algebras 1719
Udayan B. Darji, Michael J. Evans, and Richard J. O'Malley, Condition $\mathscr{B}$ and Baire 1 generalized derivatives 1727
S. Kaliszewski, A note on Morita equivalence of twisted C^*-dynamical systems 1737
Don Hadwin, Triangular truncation and normal limits of nilpotent operators 1741
Beata Randrianantoanina, Contractive projections in nonatomic function spaces 1747
Chen Peixin, σ-weakly closed modules of certain reflexive operator algebras 1751
James E. Thomson, Bounded point evaluations and polynomial approximation 1757
D. Benjamin Mathes and Vern I. Paulsen, Operator ideals and operator spaces 1763
Y. A. Abramovich, C. D. Aliprantis, and O. Burkinshaw, Invariant subspaces for positive operators acting on a Banach space with basis 1773
Fuad Kittaneh, Normal derivations in norm ideals 1779
J. K. Langley, On the multiple points of certain meromorphic functions 1787
Songwei Qian, ε-isometric embeddings 1797
M. Jazar, Fractional powers of momentum of a spectral distribution 1805
A. Badrikian, G. W. Johnson, and Il Yoo, The composition of operator-valued measurable functions is measurable 1815
Zoltán Buczolich and Krzysztof Ostaszewski, The Hausdorff dimension of graphs of density continuous functions II 1821
Mitsuharu Ôtani, Almost periodic solutions of periodic systems governed by subdifferential operators 1827
P. A. Binding and Y. X. Huang, Existence and nonexistence of positive eigenfunctions for the p-Laplacian 1833
Efton Park, Isometries of unbounded Fredholm modules over reduced group C^*-algebras . 1839
M. Thamban Nair, On spectral properties of perturbed operators 1845
Peter Šemrl, Isomorphisms of standard operator algebras 1851
Walter Bergweiler and Steffen Rohde, Omitted values in domains of normality 1857

C. APPLIED MATHEMATICS

Ram U. Verma, Regular operator convergence and nonlinear equations involving numerical ranges 1859

D. GEOMETRY

Steven C. Ferry and Boris L. Okun, Approximating topological metrics by Riemannian metrics 1865
Chun-Chung Hsieh, Some complete Ricci-flat Kahler metrics in CP^2 1873

E. LOGIC AND FOUNDATIONS

Tomek Bartoszyński and Haim Judah, On the cofinality of the smallest covering of the real line by meager sets II 1879

F. STATISTICS AND PROBABILITY

K. Farahmand, Level crossings of a random polynomial with hyperbolic elements 1887
P. W. Millar, On a theorem of Hartman and Wintner 1893

G. TOPOLOGY

William Beckner, Pitt's inequality and the uncertainty principle 1897
W. T. Ingram, Periodicity and indecomposability 1907
William Geller and Benjamin Weiss, Uniqueness of maximal entropy odd orbit types 1917
Minoru Murata, Uniqueness and nonuniqueness of the positive Cauchy problem for the heat equation on Riemannian manifolds 1923
Yoonweon Lee, Mayer-Vietoris formula for the determinant of a Laplace operator on an even-dimensional manifold 1933
Wojtek Jastrzebowski, Free involutions on E_{4m} lattices 1941
Marek Izydorek and Jan Jaworowski, Antipodal coincidence for maps of spheres into complexes 1947

Patrick D. McSwiggen, Unique integrability of continuous k-plane fields 1951

SHORTER NOTES

Robert M. Guralnick, J. Chris Robson, and Lance W. Small, Normalizing elements in *PI* rings 1955

Vol. 123, No. 7 **Whole No. 433** **July 1995**

A. ALGEBRA, NUMBER THEORY, AND COMBINATORICS

George Grätzer, Ivan Rival, and Nejib Zaguia, Small representations of finite distributive lattices as congruence lattices 1959
Hélène Dherte, Quadratic descent of involutions in degree 2 and 4 1963
Kenneth G. Wolfson, Isomorphisms between endomorphism rings of modules 1971
Michael A. Bean, A note on the Thue inequality 1975
Murray Bremner, Four-point affine Lie algebras 1981
Mark R. Johnson and K. N. Raghavan, Cohen-Macaulayness of blow-ups of homogeneous weak d-sequences 1991
Patrick J. Morandi and B. A. Sethuraman, Noncrossed product division algebras with a Baer ordering 1995
P. G. Anderson, T. C. Brown, and P. J.-S. Shiue, A simple proof of a remarkable continued fraction identity 2005
Stephen D. Cohen, Gary L. Mullen, and Peter Jau-Shyong Shiue, The difference between permutation polynomials over finite fields 2011
D. Moldavanski and N. Sibyakova, On the finite images of some one-relator groups 2017

B. ANALYSIS

Wing Suet Li and Elizabeth Strouse, Reflexivity of tensor products of linear transformations 2021
Jose Miguel Alonso, Optimal intervals of stability of a forced oscillator 2031
A. K. Varma, Some inequalities of algebraic polynomials 2041
G. Jungck and H. K. Pathak, Fixed points via "biased maps" 2049
Julius B. Barbanel and Alan D. Taylor, Preference relations and measures in the context of fair division 2061
B. Malcolm Brown and Mourad E. H. Ismail, A right inverse of the Askey-Wilson operator 2071
Athanassios G. Kartsatos, On the compactness of the evolution operator generated by certain nonlinear Ω-accretive operators in general Banach spaces 2081
Barbara D. MacCluer and Peter R. Mercer, Composition operators between Hardy and weighted Bergman spaces on convex domains in $\mathbf{C}^N$ 2093
Yonne Mi Kim, Carleman inequalities for the Dirac operator and strong unique continuation 2103
Lech Maligranda, Josip E. Pečarić, and Lars Erik Persson, Stolarsky's inequality with general weights 2113
Jean Guillerme, Intermediate value theorems and fixed point theorems for semi-continuous functions in product spaces 2119
V. Kéyantuo, A note on interpolation of semigroups 2123
Radu Gadidov, On polynomially bounded operators with rich spectrum 2133
Shouchuan Hu and Nikolaos S. Papageorgiou, Delay differential inclusions with constraints 2141
Walter Bergweiler, On the composition of transcendental entire and meromorphic functions 2151
Zhuan Ye, The error term of holomorphic mappings in Nevanlinna theory 2155
Yuichi Kanjin and Enji Sato, The Hardy-Littlewood theorem on fractional integration for Laguerre series 2165
Hari Bercovici and Srdjan Petrović, Generalized scalar operators as dilations 2173
Y.-S. Han, The embedding theorem for the Besov and Triebel-Lizorkin spaces on spaces of homogeneous type 2181
Brian Coomes, On the torsion part of $\mathbf{C}^{[n]}$ with respect to the action of a derivation 2191
Ole Christensen, A Paley-Wiener Theorem for frames 2199

Aleksander Maliszewski, Characteristic functions and products of bounded derivatives ... 2203
Kazunori Kodaka and Hiroyuki Osaka, Real rank of tensor products of C^*-algebras 2213
Toby O'Neil, A measure with a large set of tangent measures 2217

D. GEOMETRY

Daryl Cooper, Quasi-isometries of hyperbolic space are almost isometries 2221

E. LOGIC AND FOUNDATIONS

Arthur W. Apter, On the first n strongly compact cardinals 2229

G. TOPOLOGY

Juris Steprāns and Stephen Watson, Mutually complementary families of T_1 topologies, equivalence relations and partial orders 2237
Min Ho Lee, Twisted torus bundles over arithmetic varieties 2251
Wojciech Olszewski, Completion theorem for cohomological dimensions 2261
Jeffrey Fox and Peter Haskell, Index theory for perturbed Dirac operators on manifolds with conical singularities 2265
Kenji Tsuboi, On the determinant and the holonomy of equivariant elliptic operators 2275

Vol. 123, No. 8 **Whole No. 434** **August 1995**

A. ALGEBRA, NUMBER THEORY, AND COMBINATORICS

Leonid Brailovsky, Dmitrii V. Pasechnik, and Cheryl E. Praeger, Subsets close to invariant subsets for group actions 2283
Jianbei An and Marston Conder, On the numbers of 2-weights, unipotent conjugacy classes, and irreducible Brauer 2-characters of finite classical groups 2297
Sebastian Walcher, On monocomposition algebras 2305
Daniel Britten, Frank Lemire, and Vahid Tarokh, A constraint on the existence of simple torsion-free Lie modules 2315
M. González and J. Otal, Embedding theorems for residually Černikov CC-groups 2323
John T. Condo, LCM-stability of power series extensions characterizes Dedekind domains 2333
Susan Montgomery, Indecomposable coalgebras, simple comodules, and pointed Hopf algebras 2343
Carter G. Lyons and Gary L. Peterson, Semidirect products of I–E groups 2353
Yu Chen, On representations of elementary subgroups of Chevalley groups over algebras . 2357
Michael R. Anderson, The noncommutativity of Hecke algebras associated to Weyl groups 2363
I-Chiau Huang, A residue map and its applications to some one-dimensional rings 2369
Masakazu Yamagishi, On the number of Galois p-extensions of a local field 2373
Ulrich Albrecht and Jutta Hausen, Non-singular modules and R-homogeneous maps 2381
Yufei Xiao, Rings with flat socles 2391
Le Tuan Hoa and Rosa M. Miró-Roig, Bounds for the Betti numbers of generalized Cohen-Macaulay ideals 2397

B. ANALYSIS

Ching-Yun Suen, The minimum norm of certain completely positive maps 2407
D. Preiss and M. Tartaglia, On characterizing derivatives 2417
D. H. Armitage, On solutions of elliptic equations that decay rapidly on paths 2421
A. I. Aptekarev, V. Kaliaguine, and W. Van Assche, Criterion for the resolvent set of non-symmetric tridiagonal operators 2423
Raúl Curto and Martin Mathieu, Spectrally bounded generalized inner derivations 2431
Muneo Chō and Masuo Itoh, Putnam's inequality for p-hyponormal operators 2435
Alf Jonsson, Measures satisfying a refined doubling condition and absolute continuity ... 2441

Stanislaw Migorski, A counterexample to a compact embedding theorem for functions with values in a Hilbert space 2447
Chaohui Zhang, Non-extendibility of the Bers isomorphism 2451
T. Kilpeläinen and P. Lindqvist, The Lavrentiev phenomenon and the obstacle problem for the Dirichlet integral 2459
James H. Liu, Uniform asymptotic stability via Liapunov-Razumikhin technique 2465
Hajrudin Fejzić, Convex functions and Schwarz derivatives 2473
H. T. Koelink, Identities for q-ultraspherical polynomials and Jacobi functions 2479
M. V. Velasco and A. R. Villena, A random Banach-Steinhaus theorem 2489
A. G. Ramm, Finding discontinuities from tomographic data 2499
Jean-Pierre Grenier, Fonctions totalement croissantes: Une correction 2507
L. Elsner and S. Friedland, Variation of the discrete eigenvalues of normal operators 2511
Kazuaki Taira, Boundary value problems for elliptic pseudo-differential operators 2519

C. APPLIED MATHEMATICS

Tomek Bartoszynski and Marion Scheepers, Filters and games 2529

D. GEOMETRY

Toby N. Bailey and A. Rod Gover, Exceptional invariants in the parabolic invariant theory of conformal geometry 2535
Manuel Barros and Oscar J. Garay, On submanifolds with harmonic mean curvature 2545

E. LOGIC AND FOUNDATIONS

Chris Miller, Infinite differentiability in polynomially bounded o-minimal structures 2551

F. STATISTICS AND PROBABILITY

A. K. Gupta and S. Ofori-Nyarko, On disguised inverted Wishart distribution 2557

G. TOPOLOGY

Harold Levine, Computing the Euler characteristic of a manifold with boundary 2563
C. Costantini, Every Wijsman topology relative to a Polish space is Polish 2569
Stephen Watson, A compact Hausdorff space without P-points in which G_δ-sets have interior 2575
H. Movahedi-Lankarani and R. Wells, Ultrametrics and geometric measures 2579
Koji Fujiwara, Eigenvalues of Laplacians on a closed Riemannian manifold and its nets .. 2585
Colette Anné, A note on the generalized Dumbbell problem 2595
Kôichi Tsuda, Completeness of metrizable pre-images of van Douwen-complete spaces ... 2601

Vol. 123, No. 9 **Whole No. 435** **September 1995**

A. ALGEBRA, NUMBER THEORY, AND COMBINATORICS

Yi Hu, (W-R)-matroids and thin Schubert-type cells attached to algebraic torus actions .. 2607
G. Grätzer, H. Lakser, and E. T. Schmidt, Congruence lattices of small planar lattices ... 2619
Youngju Choie, A short note on the full Jacobi group 2625
Stephen Jackson and Luca Q. Zamboni, A note on a theorem of Chiswell 2629
David W. Jensen, Nilpotency of derivations in prime rings 2633
Paul G. Goerss and Thomas J. Lada, Relations among homotopy operations for simplicial commutative algebras 2637
Kuniaki Horie and Mitsuko Horie, On the 2-class groups of cyclotomic fields whose maximal real subfields have odd class numbers 2643
Charles H. Walter, Hyperplane sections of arithmetically Cohen-Macaulay curves 2651
Salma Kuhlmann, Isomorphisms of lexicographic powers of the reals 2657

B. ANALYSIS

Miguel Cabrera García and Angel Rodríguez Palacios, A new simple proof of the Gelfand-Mazur-Kaplansky theorem 2663
Alberto Alonso and Javier F. Rosenblueth, Measurability of unions of certain dense sets .. 2667
Udayan B. Darji, Michael J. Evans, and Richard J. O'Malley, Universally first return continuous functions 2677
Joseph W.-H. So and J. S. Yu, Global attractivity for a population model with time delay 2687
Yu-Ping Hsu, The lifting of the UKK property from E to C_E 2695
P. Rosenthal and A. Sołtysiak, Formulas for the joint spectral radius of non-commuting Banach algebra elements 2705
Du Hong-ke, Another generalization of Anderson's theorem 2709
Henryk Hudzik and Anna Kamińska, Monotonicity properties of Lorentz spaces 2715
Seiji Konakazawa, A coefficient problem with typically real extremal function 2723
Shushang Fu, λ-power integrals on the Cantor type sets 2731
E. de Amo and M. Díaz Carrillo, On abstract Fubini theorems for finitely additive integration 2739
B. E. Rhoades, Commutants for some classes of Hausdorff matrices 2745
Robert B. Gardner and N. K. Govil, Some inequalities for entire functions of exponential type 2757
Maciej Klimek, Metrics associated with extremal plurisubharmonic functions 2763
Huu Hung Bui, Morita equivalence of twisted crossed products 2771
Takahiko Nakazi and Katsutoshi Takahashi, Two-dimensional representations of uniform algebras 2777
M. Baran and W. Pleśniak, Markov's exponent of compact sets in $\mathbb{C}^n$ 2785
A. Eremenko and D. H. Hamilton, On the area distortion by quasiconformal mappings ... 2793
J. M. Aldaz, Representing abstract measures by Loeb measures: A generalization of the standard part map 2799
Satoshi Kawakami and Yasuo Watatani, The multiplicativity of the minimal index of simple C^*-algebras 2809
G. Schlüchtermann, A note on multiplication of strong operator measurable functions ... 2815
Seán Dineen, A Dvoretzky theorem for polynomials 2817
Xinhui Jiang, On Fredholm operators in quarter-plane Toeplitz algebras 2823

D. GEOMETRY

Alfonso Romero and Miguel Sánchez, Completeness of compact Lorentz manifolds admitting a timelike conformal killing vector field 2831
Hu Ze-Jun, Complete hypersurfaces with constant mean curvature and non-negative sectional curvatures 2835
W. Kühnel and H.-B. Rademacher, Conformal diffeomorphisms preserving the Ricci tensor 2841
Quo-Shin Chi, Gary R. Jensen, and Ruijia Liao, Isoparametric functions and flat minimal tori in $\mathbb{C}P^2$ 2849
Ulrich Everling, Isometries of spheres 2855

E. LOGIC AND FOUNDATIONS

Karel Prikry, A non-homogeneity property of σ-ideals 2861
Douglas Burke, Generic embeddings and the failure of box 2867
S. D. Friedman, Provable Π^1_2-singletons 2873

F. STATISTICS AND PROBABILITY

Ilan Vardi, The limiting distribution of the St. Petersburg game 2875

G. TOPOLOGY

Tadashi Watanabe, A note on cohomological dimension of approximate movable spaces .. 2883
A. N. Dranishnikov, The power substitution for rings of complex and real functions on compact metric spaces 2887
George Seifert, Almost periodicity in semiflows 2895
Jérôme Buzzi, Number of equilibrium states of piecewise monotonic maps of the interval 2901
Peter Teichner, 6-dimensional manifolds without totally algebraic homology 2909

Teruhiko Soma, Equivariant, almost homeomorphic maps between S^1 and S^2 2915
James Eells and Paul Yiu, Polynomial harmonic morphisms between Euclidean spheres .. 2921
James P. Hatzenbuhler and Don A. Mattson, Compactifications with discrete remainders . 2927

SHORTER NOTES

R. J. Archbold, On residually finite-dimensional C^*-algebras 2935

Vol. 123, No. 10 **Whole No. 436** **October 1995**

A. ALGEBRA, NUMBER THEORY, AND COMBINATORICS

Charles Ching-An Cheng, James H. McKay, and Stuart Sui-Sheng Wang, Younger mates and the Jacobian conjecture 2939
Che-Man Cheng, On principal sections of a pair of forms 2949
Andrew J. Woldar, A reduction theorem on purely singular splittings of cyclic groups 2955
Susanna Fishel, Statistics for special q,t-Kostka polynomials 2961
D. D. Anderson, Noetherian domains with many more elements than height-one primes .. 2971
David M. Riley, The dimension subalgebra problem for enveloping algebras of Lie superalgebras 2975
Jan Denef and Willem Veys, On the holomorphy conjecture for Igusa's local zeta function 2981
Tatsuo Suwa, Indices of holomorphic vector fields relative to invariant curves on surfaces . 2989

B. ANALYSIS

Valerio De Angelis, On the inequality $|p(z)| \leq p(|z|)$ for polynomials 2999
Claudio Hirofume Asano, On the C^∞ wave-front set of solutions of first-order nonlinear PDE's 3009
Y. A. Abramovich and A. W. Wickstead, Solutions of several problems in the theory of compact positive operators 3021
D. Burghelea, L. Friedlander, and T. Kappeler, On the determinant of elliptic boundary value problems on a line segment 3027
Don Hadwin, An operator still not satisfying Lomonosov's hypothesis 3039
Shouchuan Hu and Nikolaos S. Papageorgiou, On the existence of periodic solutions for nonconvex-valued differential inclusions in $\mathbf{R}^N$ 3043
Yutaka Kamimura, An inverse problem in bifurcation theory, III 3051
Qingkai Kong, Oscillation results on linear systems of difference equations 3057
Nawfal Elhage Hassan, Rang réel de certaines extensions 3067
Ja A Jeong, Purely infinite simple C^*-crossed products 3075
S. Ferenczi and B. Kamiński, Zero entropy and directional Bernoullicity of a Gaussian $\mathbf{Z}^2$-action 3079
Per Sjölin, A remark on the Hausdorff-Young inequality 3085
Lutz Weis, The stability of positive semigroups on L_p spaces 3089
Han Deguang and Wei Shuyun, Local derivations of nest algebras 3095
Goran Peškir, Best constants in Kahane-Khintchine inequalities for complex Steinhaus functions 3101
Richard Rochberg, A Kronecker theorem for higher order Hankel forms 3113
Ricardo Bianconi, A note on the construction of a certain class of Kleinian groups 3119
A. Van Daele, The Haar measure on a compact quantum group 3125
Alexis Alevras, A note on the boundary representation of a continuous spatial semigroup of $*$-endomorphisms of $\mathscr{B}(\mathscr{H})$ 3129
A. Sri Ranga, Symmetric orthogonal polynomials and the associated orthogonal L-polynomials 3135
Manuel Valdivia, Banach spaces of polynomials without copies of l^1 3143
V. Tolokonnikov, Stable rank of H^∞ in multiply connected domains 3151
Miroslav Engliš, Asymptotics of reproducing kernels on a plane domain 3157

Gábor Francsics and Nicholas Hanges, Explicit formulas for the Szegő kernel on certain weakly pseudoconvex domains 3161
Dashan Fan and Zhijian Wu, Transference of maximal multipliers on Hardy spaces 3169

C. APPLIED MATHEMATICS

Fernando Luque-Vásquez and Onésimo Hernández-Lerma, A counterexample on the semicontinuity of minima 3175

D. GEOMETRY

Ara Basmajian and Gerard Walschap, Metric flows in space forms of nonpositive curvature 3177
Li Haizhong, A characterization of Clifford minimal hypersurfaces in S^4 3183

E. LOGIC AND FOUNDATIONS

Janusz Pawlikowski, On a rectangle inclusion problem 3189
Haseo Ki, The Borel classes of Mahler's A, S, T, and U numbers 3197

F. STATISTICS AND PROBABILITY

Deli Li, M. Bhaskara Rao, and R. J. Tomkins, A strong law for B-valued arrays 3205

G. TOPOLOGY

M. M. Awartani and David W. Henderson, Compactifications of the ray with the arc as remainder admit no n-mean 3213
P. Manoharan, Generalized Swan's theorem and its application 3219
J. B. Fugate and Lee Mohler, Fixed point theorems for arc-preserving mappings of uniquely arcwise-connected continua 3225
Nguyen To Nhu, Admissibility, the locally convex approximation property, and the ar-property in linear metric spaces 3233
Lucien Guillou, A generalized translation theorem for free homeomorphisms of surfaces .. 3243
Gerard A. Venema, Duality on noncompact manifolds and complements of topological knots 3251

Vol. 123, No. 11 **Whole No. 437** **November 1995**

A. ALGEBRA, NUMBER THEORY, AND COMBINATORICS

Yakov Berkovich, Generalizations of M-groups 3263
Gary Griffing, Dual Lie elements and a derivation for the cofree coassociative coalgebra .. 3269
Yong-Gao Chen, View-obstruction problems and Kronecker's theorem 3279
Yuichiro Taguchi, The Tate conjecture for t-motives 3285
Edgar G. Goodaire, The radical of a modular alternative loop algebra 3289
Stephen M. Gagola Jr., A note on G-invariant forms 3301

B. ANALYSIS

Michel Solovej, Wedderburn decompositions of commutative Banach algebras 3305
Ja A Jeong and Gle Hyun Park, Projections in some simple C^*-crossed products 3317
Bernard Aupetit, A geometrical characterization of algebraic varieties of $\mathbf{C}^2$ 3323
Cándido Piñeiro, Sequences in the range of a vector measure with bounded variation 3329
Peng Lin and Richard Rochberg, On the Friedrichs operator 3335
George E. Andrews and Douglas Bowman, A full extension of the Rogers-Ramanujan continued fraction 3343
Ralph deLaubenfels and Fuyuan Yao, Entire solutions of the abstract Cauchy problem in a Hilbert space 3351
Nikan B. Firoozye, n-Laplacian in $\mathcal{H}^1_{\text{loc}}$ does not lead to regularity 3357

Samuel S. Holland Jr., Projections algebraically generate the bounded operators on real or quaternionic Hilbert space 3361
Volker Runde, Locally compact groups which have the weakly compact homomorphism property 3363
B. Stanković, Analytic ultradistributions 3365
Miroljub Jevtić, On the Carleson measure characterization of BMO functions on the unit sphere 3371
Raphael A. Hauser and Heinrich Matzinger III, Compact elements and smallest faithful representation of C^*-algebras 3379
Christian Constanda, The boundary integral equation method in plane elasticity 3385
Claudio H. Morales and Simba A. Mutangadura, On a fixed point theorem of Kirk 3397
N. V. Zhivkov, Compacta with dense ambiguous loci of metric projections and antiprojections 3403
Marek Balcerzak and Dorota Rogowska, Solution of the Baire order problem of Mauldin . 3413
Robert Dalmasso, Uniqueness of positive solutions of nonlinear second-order equations .. 3417
Guangwu Xu, Amenability and uniformly continuous functionals on the algebras $A_p(G)$ for discrete groups 3425
Amin Boumenir, Direct computation of the spectral function 3431
L. J. Bunce and J. Hamhalter, Countably additive homomorphisms between von Neumann algebras 3437
K. B. Laursen and M. Mbekhta, Operators with finite chain length and the ergodic theorem 3443
Chengjun Hou and Deguang Han, On some ideals of nest algebras 3449
Shigeru Hasegawa and Ryotaro Sato, On d-parameter pointwise ergodic theorems in L_1 .. 3455
J.-Ph. Labrousse, The general local form of an analytic mapping into the set of idempotent elements of a Banach algebra 3467
Eungil Ko, Algebraic and triangular n-hyponormal operators 3473

C. APPLIED MATHEMATICS

Marion Scheepers, A direct proof of a theorem of Telgársky 3483
Martin Hanke, The minimal error conjugate gradient method is a regularization method . 3487

D. GEOMETRY

Robert W. Smyth and Tilla Weinstein, Conformally homeomorphic Lorentz surfaces need not be conformally diffeomorphic 3499
Yi-Bing Shen, On compact Kaehler submanifolds in $\mathbb{C}P^{n+p}$ with nonnegative sectional curvature 3507
Tudor Zamfirescu, Points joined by three shortest paths on convex surfaces 3513
Yoshio Agaoka, An example of almost flat affine connections on the three-dimensional sphere 3519

E. LOGIC AND FOUNDATIONS

Ireneusz Reclaw, Remarks about γ-sets and Borel-dense sets 3523

G. TOPOLOGY

Kanji Morimoto, There are knots whose tunnel numbers go down under connected sum .. 3527
Zaqueu Coelho, Artur Lopes, and Luiz Fernando da Rocha, Absolutely continuous invariant measures for a class of affine interval exchange maps 3533
Charles Radin, Aperiodic tilings in higher dimensions 3543
Carlos Biasi and Osamu Saeki, On the Betti number of the image of a codimension-k immersion with normal crossings 3549
Thomas Bartsch and Michel Willem, On an elliptic equation with concave and convex nonlinearities 3555
Elena Martín-Peinador, A reflexive admissible topological group must be locally compact . 3563
V. V. Uspenskij, Tri-quotient maps are preserved by infinite products 3567
Kouki Taniyama, Knotted projections of planar graphs 3575
Ronald M. Dotzel and Tej B. Singh, Cohomology ring of the orbit space of certain free Z_p-actions 3581

Vol. 123, No. 12 Whole No. 438 December 1995

A. ALGEBRA, NUMBER THEORY, AND COMBINATORICS

Alberto Facchini, Dolors Herbera, Lawrence S. Levy, and Peter Vámos, Krull-Schmidt fails for artinian modules 3587
Dolors Herbera and **Ahmad Shamsuddin,** Modules with semi-local endomorphism ring ... 3593
Thomas Marley, Finitely graded local cohomology and the depths of graded algebras 3601
Tohru Nakashima, Bogomolov-Gieseker inequality and cohomology vanishing in characteristic p 3609
Jinghua Kuang, A natural orthogonal basis of eigenfunctions of the Hecke algebra acting on Cayley graphs 3615
Rolf Brandl and Thomas Huckle, On the isomorphism problem for Burnside rings 3623
Yongdong Guo and Maohua Le, A note on the exponential diophantine equation $x^2-2^m=y^n$ 3627
Tadahito Harima, Characterization of Hilbert functions of Gorenstein Artin algebras with the weak Stanley property 3631
Santiago Zarzuela, On the depth of blowup algebras of ideals with analytic deviation one . 3639

B. ANALYSIS

L. Rodríguez-Piazza, Every separable Banach space is isometric to a space of continuous nowhere differentiable functions 3649
G. M. Troianiello, Weighted norm estimates for oblique derivative problems 3655
Vladimír Olejček, The σ-class generated by balls contains all Borel sets 3665
Urban Cegrell and Evgeny A. Poletsky, A counterexample to the "fine" problem in pluripotential theory 3677
William E. Hornor, Generalized conditional expectations 3681
Semra Kiliç, The Berezin symbol and multipliers of functional Hilbert spaces 3687
Józef Banaś, Leszek Olszowy, and Kishin Sadarangani, Moduli of near convexity of the Baernstein space 3693
Casper Goffman, Porous sets and convergence of Fourier series 3701
Friedmar Schulz and Lihe Wang, Isolated singularities of Monge-Ampère equations 3705
S. P. Eveson, Compactness criteria for integral operators in L^∞ and L^1 spaces 3709
José Bonet and Carmen Fernández, Bounded sets in (LF)-spaces 3717
J. M. Anderson and A. M. Ulanovsky, The decay of subharmonic functions of finite order along a ray 3725
Dante Giarrusso and Yuval Fisher, A parameterization of the period 3 hyperbolic components of the Mandelbrot set 3731
Howard Masur, The Teichmuller flow is Hamiltonian 3739
B. Simon, L^p norms of the Borel transform and the decomposition of measures 3749
Richard Bouldin, Generalizations of semi-Fredholm operators 3757
Sheldon Axler and Wade Ramey, Harmonic polynomials and Dirichlet-type problems 3765
George A. Anastassiou, Ostrowski type inequalities 3775
J. DeFranza and K. Zeller, Hardy-Bohr positivity 3783
Kwon Cho and Hi Jun Choe, Nonlinear degenerate elliptic partial differential equations with critical growth conditions on the gradient 3789
Guillermo P. Curbera, Banach space properties of L^1 of a vector measure 3797
Chun Cao, Some trace inequalities for discrete groups of Möbius transformations 3807
Petr Hájek, Smooth norms that depend locally on finitely many coordinates 3817
Vladimir Rakočević, Semi-Fredholm operators with finite ascent or descent and perturbations 3823
Hideki Nakamura, Actions of regular multiplicative unitaries on C^*-algebras 3827

D. GEOMETRY

Faruk F. Abi-Khuzam, Jacobian elliptic functions and minimal surfaces 3837
Luc Vrancken, Affine surfaces whose geodesics are planar curves 3851
G. Gentile and V. Pagliara, Riemannian metrics with large first eigenvalue on forms of degree p 3855

E. LOGIC AND FOUNDATIONS

John J. Thurber, Every low_2 Boolean algebra has a recursive copy 3859
Zuzana Bukovská and Lev Bukovský, Adding small sets to an N-set 3867

F. STATISTICS AND PROBABILITY

Maciej Lewandowski, Michał Ryznar, and Tomasz Żak, Anderson inequality is strict for Gaussian and stable measures 3875

G. TOPOLOGY

Neil Hindman and Dona Strauss, Chains of idempotents in $\beta\mathbb{N}$ 3881
William Richter, The H-space squaring map on $\Omega^3 S^{4n+1}$ factors through the double suspension 3889
Augustin Banyaga and Philippe Rukimbira, On characteristics of circle-invariant presymplectic forms 3901
Marco Reni and Bruno Zimmermann, Handlebody orbifolds and Schottky uniformizations of hyperbolic 2-orbifolds 3907